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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/743,268	02/16/2001	Borge Svingen	3696-0101P	8223

7590

11/01/2004

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EXAMINER

WONG, LESLIE

ART UNIT

PAPER NUMBER

2167

DATE MAILED: 11/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/743,268

Applicant(s)

SVINGEN ET AL.

Examiner

Leslie Wong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) *
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Receipt of Applicant's Amendment, filed 18 June 2004, is acknowledged.

Specification

2. The spacing of the lines of the specification is such as to make reading and entry of amendments difficult. New application papers with lines **double spaced** on good quality paper are required.

3. The new abstract received on 18 June 2004 is acceptable.

Drawings

4. The drawings were received on 18 June 2004. These drawings are acceptable.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 12, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baclawski (U.S. Patent 5,694,593)** in view of **Tsuchida et al. ("Tsuchida")** (U.S. 2001/0011268 A1).

Regarding claims 12 and 20, **Baclawski** teaches a search engine for searching a collection of documents, the search engine comprising:

- a). at least one dispatch node (i.e., home node), the at least one dispatch node being effective to receive and forward a search query from a user of the search engine (col. 3, lines 25-27 and 32-34);
- b). a plurality of search nodes, coupled to the dispatch node, the search nodes each being effective to receive the search query from a respective dispatch node, and to process the search query using a searching algorithm (col. 3, lines 17-24 and col. 2, lines 3-17); and
- c). at least one indexing node, coupled to the search nodes, the at least one indexing node effective to create a respective partition-dependent data set for a respective search node (col. 3, lines 27-29 and col. 2, lines 8-11); wherein

d). each search node in one of the rows of search nodes including a distinct partition-dependent data set so that a sum of the data sets of all the search nodes in a row yields the collection of documents, and every respective search node in one of the columns of search nodes include substantially the same partition-dependent data set (col. 3, lines 33-36 and col. 4, lines 8-14).

Baclawski does not explicitly teach that the search nodes are logically arranged in a table comprising a plurality of columns and a plurality of rows.

Tsuchida, however, teaches 'the search nodes are logically arranged in a table comprising a plurality of columns and a plurality of rows' as the parallel database is composed of plurality of tables. Each table is a two-dimensional table comprising a plurality of rows. One row includes at least one column (§s 0057 and 0062).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Tsuchida's** teaching would have allowed **Baclawski's** to implement a scalable system configuration to support the desired degree of parallelism for high-speed query processing as suggested by **Tsuchida** (see abstract).

Regarding claim 18, **Baclawski** further teaches wherein the search node includes a search software module (col. 3, lines 33-36).

6. Claims 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baclawski (U.S. Patent 5,694,593)** in view of **Tsuchida et al. ("Tsuchida") (U.S.**

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2001/0011268 A1) as applied to claim 12 above and further in view of **Stolfo et al.**

(**“Stolfo”**)(U.S. Patent 4,860,201).

Regarding claim 13, **Baclawski** and **Tsuchida** do not explicitly teach a plurality of dispatch nodes arranged in a multi-level hierarchical configuration.

Stolfo, however, teaches wherein ‘a plurality of dispatch nodes arranged in a multi-level hierarchical configuration’ as plurality of processing elements identified as PE1 through PE1023 arranged in the form of a binary tree (col. 8, lines 44-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Stolfo’s** teaching would have allowed **Tsuchida-Baclawski’s** to improve the efficiency of parallel processing machines by reducing the computation time deviation of each processor from the mean computation time as suggested by **Stolfo** at col. 7, line 67 – col. 8, line 2.

Regarding claim 19, **Tsuchida** and **Baclawski** do not explicitly teach wherein each search node includes at least one module of at least one search processor chip adapted for parallel handling of a plurality of search queries.

Stolfo, however, teaches ‘each search node includes at least one module of at least one search processor chip adapted for parallel handling of a plurality of search queries’ as providing direct hardware support for quickly computing a range of commutative and associative binary operations (col. 5, lines 46-49).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Stolfo's** teaching would have allowed **Tsuchida-Baclawski's** to increase the query processing time in the parallel environment to log time by computing a range of commutative and associative binary operations using the hardware support as suggested by **Stolfo** at col. 5, lines 45-55.

7. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baclawski (U.S. Patent 5,694,593)** in view of **Tsuchida et al. ("Tsuchida") (U.S. 2001/0011268 A1)** as applied to claim 12 above and further in view of **Tsuchida et al. ("Tsuchida[2]") (U.S. Patent 6,567,806)**.

Regarding claims 14 and 15, **Baclawski** and **Tsuchida** do not explicitly teach at least one acquisition node, distinct from the dispatch nodes, the acquisition node effective to acquire results from the search nodes for the search query.

Tsuchida[2], however, teaches 'at least one acquisition node, distinct from the dispatch nodes, the acquisition node effective to acquire results from the search nodes for the search query' as the distribution node and join node process information independently. Each of the join nodes sorts information distributed from the distribution node, merges the sorted information, joins a query on the basis of the merged information, and outputs the result for the query obtained from the join node (col. 3, lines 30-36).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Tsuchida[2]**'s teaching would have allowed **Baclawski-Tsuchida's** to realize a quicker query process by equally distributing data to each node and parameterized each database operation to be executed in each node. Thus the processing time is not biased and the pipeline operation can be performed smoothly as suggested by **Tsuchida[2]** at col. 3, lines 46-52 and col. 2, lines 56-61.

8. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baclawski (U.S. Patent 5,694,593)** in view of **Tsuchida et al. ("Tsuchida") (U.S. 2001/0011268 A1)** and **Tsuchida et al. ("Tsuchida[2]") (U.S. Patent 6,567,806)** as applied to claims 14-15 above and further in view of **Stolfo et al. ("Stolfo") (U.S. Patent 4,860,201)**.

Regarding claims 16-17, **Baclawski, Tsuchida, and Tsuchida[2]** do not explicitly teach a plurality of dispatch nodes arranged in a multi-level hierarchical configuration.

Stolfo, however, teaches wherein 'a plurality of dispatch nodes arranged in a multi-level hierarchical configuration' as plurality of processing elements identified as PE1 through PE1023 arranged in the form of a binary tree (col. 8, lines 44-47).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Stolfo's**

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teaching would have allowed **Tsuchida-Baclawski's** to improve the efficiency of parallel processing machines by reducing the computation time deviation of each processor from the mean computation time as suggested by **Stolfo** at col. 7, line 67 – col. 8, line 2.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Leiserson et al. (U.S. Patent 5,388,214).

Arakawa et al. (U.S. Patent 6,424,970 B1).

Lohman et al. (U.S. Patent 6,112,198).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

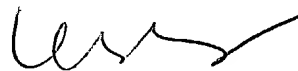
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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Wong whose telephone number is (571) 272-4120. The examiner can normally be reached on Monday to Friday 9:30am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leslie Wong
Patent Examiner
Art Unit 2167

LW
October 26, 2004

